

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1 1. (currently amended) A biosensor device which
2 comprises:

3 a strip of a substrate having at least two zones
4 wherein a

5 (1) first of the zones contains a first capture
6 reagent bound to ~~or as a moiety of~~ the substrate in a
7 defined area between ~~and spaced apart~~ electrodes on
8 different ~~defining~~ sides of the defined area for providing
9 an electrical bias to the defined area; and

10 (2) a second of the zones containing a fluid
11 transfer medium for supplying a fluid to the first zone,
12 wherein the second zone comprises a second defined area
13 containing a second capture reagent bound to ~~or as a moiety~~
14 ~~of~~ an electrically conductive polymer, wherein when a fluid
15 sample containing an analyte is bound by the second capture
16 reagent to form a complex in absence of electrically
17 conductive metal particles in the complex, the complex
18 migrates to the first zone in the medium and the analyte is
19 bound by the first capture reagent thereby altering a

20 conductivity or resistance of the defined area in the first
21 zone as measured between the electrodes to detect the
22 analyte.

1 2. (original) The device of Claim 1 wherein the device
2 further comprises a third zone adjacent to the first zone
3 into which the fluid is absorbed after passing through the
4 first defined area of the first zone.

1 3. (original) The device of any one of Claims 1 or 2
2 wherein the first defined area has a dimension between the
3 electrodes of 1.0 mm or less.

4-6 (cancelled)

1 7. (currently amended) A system for detecting an analyte
2 in a fluid sample which comprises:

3 (a) a biosensor device which comprises:
4 a strip of a substrate having at least two zones
5 wherein a

6 (1) first of the zones contains a first capture
7 reagent bound to ~~or as a moiety of~~ the substrate in a
8 defined area between ~~and spaced apart~~ electrodes on
9 different ~~defining the~~ sides of the defined area for

10 providing an electrical bias to the defined area; and

11 (2) a second of the zones containing a fluid
12 transfer medium for supplying a fluid to the first zone,
13 wherein the second zone comprises a second defined area
14 containing a second capture reagent bound to ~~or as a moiety~~
15 ~~of~~ an electrically conductive polymer wherein when a fluid
16 sample containing an analyte is bound by the second capture
17 reagent to form a complex in absence of any electrically
18 conductive metal particles in the complex, the complex
19 migrates to the first zone in the medium and the analyte is
20 bound by the first capture reagent thereby altering a
21 conductivity or resistance of the defined area in the first
22 zone as measured between the electrodes;

23 (b) electrical means for supplying an electrical
24 bias between the electrodes; and

25 (c) measuring means for determining a change in
26 the conductivity or resistance of the first area before and
27 after application of the sample in the second zone to
28 detect the analyte.

1 8. (currently amended) A biosensor device which comprises:
2 a strip of a substrate having at least two zones
3 wherein a

4 (1) first of the zones contains a first antibody
5 bound to the substrate in a defined area between ~~and spaced~~
6 ~~apart~~ electrodes on different ~~defining~~ sides of the defined
7 area for providing an electrical bias to the defined area;
8 and

9 (2) a second of the zones containing a fluid
10 transfer medium for supplying a fluid to the first zone,
11 wherein the second zone comprises a second defined area
12 containing a second antibody bound to an electrically
13 conductive polymer, wherein when a fluid sample containing
14 an antigen which is bound by the second antibody, bound to
15 the conductive polymer, forms to form a complex in absence
16 of any electrically conductive metal particles in the
17 complex, the complex migrates to the first zone in the
18 medium and the antigen is bound by the first antibody
19 thereby altering a conductivity or resistance of the
20 defined area in the first zone as measured between the
21 electrodes to detect the antigen.

1 9. (original) The device of Claim 8 wherein the device
2 further comprises a third zone adjacent to the first zone
3 into which the fluid is absorbed after passing through the
4 first defined area of the first zone.

1 10. (original) The device of any one of Claims 8 or 9
2 wherein the first defined area has a dimension between the
3 electrodes of 1.0 mm or less.

11-13 (cancelled)

1 14. (currently amended) A system for detecting an antigen
2 in a fluid sample which comprises:

3 (a) a biosensor device which comprises:

4 a strip of a substrate having at least two zones
5 wherein a

6 (1) first of the zones contains a first antibody
7 bound to the substrate in a defined area between ~~and spaced~~
8 ~~apart~~ electrodes on different ~~either of the~~ sides of the
9 defined area for providing an electrical bias to the
10 defined area; and

11 (2) a second of the zones containing a fluid
12 transfer medium for supplying a fluid to the first zone,
13 wherein the second zone comprises a second defined area

14 containing a second antibody bound to an electrically
15 conductive polymer, wherein when a fluid sample containing
16 an antigen which is bound by the second antibody, bound to
17 the conductive polymer, forms to form a complex in absence
18 of any electrically conductive metal particles in the
19 complex, the complex migrates to the first zone in the
20 medium and the antigen is bound by the first antibody
21 thereby altering a conductivity or resistance of the
22 defined area in the first ~~first~~ zone as measured between the
23 electrodes;

24 (b) electrical means for supplying an electrical
25 bias between the electrodes; and

26 (c) measuring means for determining a change in
27 the conductivity or resistance of the first area before and
28 after application of the sample in the second zone to
29 detect the antigen.

1 15. (currently amended) The system of Claim 14 ~~13~~ wherein
2 the device further comprises a third zone adjacent to the
3 first zone into which the fluid is absorbed after passing
4 through the ~~he~~ first defined area of the first zone.

1 16. (currently amended) The device of Claim 1 or 2 wherein
2 a third ~~substrate~~ zone adjacent to the second zone is
3 provided for applying the fluid sample containing the
4 analyte ~~which is applied~~ prior to being introduced into the
5 second zone.

17. (cancelled)

1 18. (currently amended) The system of Claim 7 or 8
2 wherein a pad adjacent to the second zone is provided for
3 applying the fluid sample containing the analyte ~~is applied~~
4 prior to being introduced into the second zone.

1 19. (currently amended) The device of Claim 8 or 9 wherein
2 a pad adjacent to the second zone is provided for applying
3 the fluid sample containing the analyte ~~is applied~~ prior to
4 being introduced into the second zone.

20. (cancelled)

1 21. (currently amended) The system of Claim 14 or 15
2 wherein a pad adjacent to the second zone is provided for
3 applying the fluid sample containing the analyte ~~is applied~~
4 prior to being introduced into the second zone.

1 22. (currently amended) The device of Claim 1 or 2 as
2 ~~wherein there is~~ a multiple array of devices grouped
3 together separately on the substrate so that multiple
4 analytes can be detected simultaneously from the same
5 sample.

23. (cancelled)

1 24. (currently amended) The device of Claim 8 or 9 as
2 ~~wherein there is~~ a multiple array of devices grouped
3 together separately on the substrate so that multiple
4 analytes are detected simultaneously from the same sample.

25. (cancelled)

1 26. (currently amended) The system of Claim 14 or 15 as
2 ~~wherein there is~~ a multiple array of devices grouped
3 together separately on the substrate so that multiple
4 analytes can be detected simultaneously from the sample.